



# Awards Campaign 2003



*Los Alamos National Laboratory's participation in the R&D 100 Awards competition results in wide recognition for the Laboratory's contributions to the nation and, indeed, the world. Scientific and technological innovations that reach the private sector for commercial development help to shape the future and truly serve society. In that sense, every Los Alamos R&D 100 entry is a winner.*

*– John C. Browne, Director*

## **What is the R&D 100 Competition?**

Since 1963, *R&D Magazine* has conducted an annual competition to select the 100 most innovative products, materials, processes, software, and systems of the previous year for its prestigious R&D 100 Awards. Winning innovations are selected on the basis of their technical importance and usefulness. Judges for the competition include a panel of outside experts and the editors of *R&D Magazine*.

An international competition, the R&D 100 Award is regarded as a benchmark for excellence by both industry and government, especially the Department of Energy. The Lab's winning record over the last 15 years is impressive. Since 1978, Los Alamos National Laboratory technologies have won 79 awards. While the Laboratory is extremely proud of its winners, it is proud of all participants who qualify to compete. The Laboratory Director annually hosts a recognition ceremony to honor all participants.

## **Why should I enter my technology?**

Entering the competition is an excellent way to increase staff and program recognition for a technology and an inventor. DOE has publicly commended the R&D 100 winners from its laboratories for their innovative research. In addition, the Laboratory's Science and Technology Base Program Office will provide \$75,000 to fund the advancement of the state of the art in the future development of the winning technologies. The Laboratory's 2002

winning team, the GENIE (for GENetic Imagery Exploitation) developers, will attend *R&D Magazine's* Awards Banquet in Chicago in October at the Navy Pier Conference Center.

## **What can I enter?**

Any new product, process, material, software, or system that becomes available for use during the 2002 calendar year is eligible for the 2003 competition. Previously submitted technologies that can claim a significant advance or partnership in 2002 may also qualify for submission. "Proof of concept" models are viewed skeptically by the judges and should not be entered until they are developed to a more advanced stage.

## **Who can help me with the submission process?**

The Industrial Business Development (IBD) Division coordinates the Laboratory's participation in the competition. *R&D Magazine* and its readers are especially interested in the market or societal impact of the innovative technologies submitted. IBD can help potential participants determine a fair market value for a proposed technology.

## **How does the Laboratory benefit?**

Participation in the R&D 100 competition is a perfect opportunity for us to showcase the Laboratory's contributions to U.S. industrial competitiveness. R&D 100 Award winners enhance the Lab's image as a leader

## **Participation Schedule:**

- **Kickoff Meetings**  
September 26, 2002  
10:00 AM  
Pecos Room 201, IBD  
October 1, 2002  
10:30 AM  
Pecos Room 201, IBD
- **Fact Sheet Submittal and Candidate Interviews**  
October 1–31, 2002
- **Commitment Date**  
November 8, 2002
- **Technology Questionnaire Deadline**  
November 27, 2002
- **Entry Preparation & Video Development**  
December–February
- **Entry Submittal to R&D Magazine**  
March 1, 2003
- **Laboratory Recognition Ceremony at the Bradbury Science Museum**  
June 2003
- **Announcement of Winners**  
July 1, 2003

*An affirmative action/equal opportunity employer, operated by the University of California for the US Department of Energy under contract W-7405-ENG-36.*



***The Laboratory's Science and Technology Base Program Office will provide \$75,000 to fund the advancement of the state of the art in the future development of the winning technologies.***

in technological innovation and help create new opportunities to build our intellectual property portfolios. These portfolios enable us to share our resources with society and create new opportunities to license and spin off technologies.

***How do I enter?***

Interested parties should follow these steps:

1. Attend one of the two **kickoff meetings** that will be held in September and October (see sidebar on page 1). These one-hour meetings will cover the nature of the award, this year's schedule, and entry requirements. Individuals or teams must interview with the the R&D 100 entry-development team to determine appropriateness of a technology for the competition and to discuss eligibility requirements and the best way to present innovations in terms of the judging criteria.

If you are familiar with the R&D 100 process or cannot attend a meeting, skip to step 2.

2. Decide to enter.
3. Fill out an R&D 100 Technology Fact Sheet (attached). Fact Sheet templates may also be found at <http://www.lanl.gov/orgs/>

[ibdnew/pdf/rd100fact.pdf](#). Fax, mail, or e-mail your Fact Sheet to Karon Stine at 665-3125, MS C333, [karon@lanl.gov](mailto:karon@lanl.gov).

4. Set up an interview with the R&D 100 entry-development team by contacting Karon Stine at 667-7683 or [karon@lanl.gov](mailto:karon@lanl.gov).
5. Work with IM-1 technical writers and designers and IM-4 videographers to create a winning entry.

For general questions about the competition, contact Cindy Boone at 667-1229 or [boone@lanl.gov](mailto:boone@lanl.gov).

Editors and designers on the R&D 100 team will work with entrants to build compelling arguments for the importance and usefulness of their innovations and to create striking supporting graphics. All Lab entries have a common graphics format, and all entries must be submitted through the Lab's R&D 100 team. The team sees that entries reach Chicago by the March 2003 deadline.

For information about entry development, contact Eileen Patterson at 665-8377, [epatterson@lanl.gov](mailto:epatterson@lanl.gov), or Kelly Parker at 665-3422, [kelly.parker@lanl.gov](mailto:kelly.parker@lanl.gov).

***For more information about the 2003 R&D 100 Award competition***

***R&D Magazine Web site at <http://www.rdmag.com> (see awards)***

***LANL IBD Web site at <http://www.lanl.gov/partnerships/rd100/index.html>***

***Entry procedures and deadlines  
Eligibility criteria  
Technology appropriateness  
Market value***

***Cindy Boone (IBD), 667-1229, [boone@lanl.gov](mailto:boone@lanl.gov)***

***Intellectual property protection***

***Patty Duran (IBD), 667-2499, [pbduran@lanl.gov](mailto:pbduran@lanl.gov)***

***Interview scheduling***

***Karon Stine (IBD), 667-7683, [karon@lanl.gov](mailto:karon@lanl.gov)***

***Technical writing & editing  
Entry procedures and deadlines***

***Eileen Patterson (IM-1), 665-8377, [epatterson@lanl.gov](mailto:epatterson@lanl.gov)***

***Design & graphics  
Cover and photography***

***Kelly Parker (IM-1), 665-3422, [kelly.parker@lanl.gov](mailto:kelly.parker@lanl.gov)***

***Video production***

***Mike Kuchinsky (IM-4), 665-7739, [mkuchinsky@lanl.gov](mailto:mkuchinsky@lanl.gov)***

# R&D 100 Technology Fact Sheet

Fax, mail, or e-mail to  
Karon Stine at 665-3125, MS C333, karon@lanl.gov

Short, user-friendly title:

Problem statement:

Los Alamos solution to the problem:

Applications

- 
- 
- 
- 
- 
- 
- 
- 

Configuration

- 
- 
- 
- 
- 
- 
- 
- 

Advantages

- 
- 
- 
- 
- 
- 
- 
- 
- 

Photo or graphic of invention  
(write a suggestion for a graphic or photo)

Development phase

- 
- 
- 
- 
- 

Industrial partner

- 
- 

Caption:

Intellectual property status  
Patents disclosed, filed, issued

- 

Copyrights

- 

License

- 

For technical information contact:

Name:

Phone:

Fax:

E-mail:

# ***The Laboratory's R&D 100 Winners' Honor Roll***

- |      |  |  |   |
|------|--|--|---|
| 2002 | • GENIE: Evolving Feature-Extraction Algorithms for Image Analysis                           | 1993   | • Miniature Elastic Backscatter Lidar     |
| 2001 | • Free-Space Quantum Cryptography  | • Phase-Sensitive Flow Cytometry                                 |   |
|      | • SCORR—Supercritical CO <sub>2</sub> Resist Remover   | • Selenium-Based Reagents for the Evaluation of Chiral Molecules |   |
|      | • Tandem-Configured Solid-State Optical Limiter  | • Ultrafast Infrared Spectrometer                                |   |
| 2000 | • ANDE: Advanced Nondestructive Evaluation System  | 1992   | • Animated Display of Speech              |
|      | • Electroexploded Metal Nanoparticles  | • Cryogenic Diamond Turning                                      |   |
| 1999 | • Acoustic Stirling Heat Engine  | • Plastic Laser Dye Rods   |   |
|      | • Atmospheric Pressure Plasma Jet  | • Portable Laser Spark Surface Mass Analyzer                     |   |
|      | • CHEMIN: A Miniaturized X-ray Diffraction and Fluorescence Instrument                       | • Thermal Neutron Multiplicity Counter                           |   |
|      | • PREDICT—A New Approach to Process Development  | • Zeeman Refractive Index Detector                               |   |
|      | • Real-Time, Puncture-Detecting, Self-Healing Materials                                      | 1991   | • Optical High-Acidity Detector           |
|      | • REED-MD: A Computer Code for Predicting Dopant Density Profiles in Semiconductor Materials | • Resonant Ultrasound Inspection                                 |   |
|      | • The Sulfur Resistant Oxymitter 4000 Oxygen Sensor  | • Semi-Insulator Detector  |   |
| 1998 | • Cyrax™—Portable, 3-D Laser-Mapping and Imaging System                                      | • Single Molecule Detector                                       |   |
|      | • Low-Smoke Pyrotechnics   | 1990   | • A Broadband Microwave Absorption        |
|      | • SOLVE—Creating 3-D Pictures of Protein Molecules   | • Coolahoop  |   |
|      | • Underground Radio  | • Fast Agarose Gel Electrophoresis (PAGE)                        |   |
| 1997 | • ASR Detect—Diagnostic Method for Analyzing Degrading Concrete DryWash                      | • Molybdenum Disilicide/Silicon Carbide Composites               |   |
|      | • Falcon: Breakthrough Software for Simulating Oil Reservoirs                                | • Solid-State NO <sub>2</sub> Sensor                             |   |
|      | • Rapid Size Analysis of Individual DNA Fragments  | • Spectrometer for Liquid Media                                  |   |
|      | • Plasma Source Ion Implantation for Enhancing Materials Surfaces                            | • Universal Process for Fingerprint Detection                    |   |
|      | • High Performance Storage System  | • Upconversion Solid-State Laser                                 |   |
| 1996 | • Transportable Remote Analyzer for Characterization & Environmental Remediation             | 1989   | • Conducting Latexes                      |
|      | • PLASMAX—Plasma Mechanical Cleaner for Silicon Wafers                                       | • FFT Flow Cytometer   |   |
| 1995 | • ARS Chemical Spill Detector  | • Noncontact Superconductor Screening                            |   |
|      | • Hydride-Dehydride Recycle Process  | 1988   | • HTMS Reference Electrode                |
|      | • HIPPI-SONET Gateway  | • Lattice Gas Algorithm  |   |
|      | • The Índigo-830   | • Mobile Beryllium Monitor                                       |   |
|      | • Microsensor for Volatile Organic Compounds   | • Nuclear Material Solution Assay System                         |   |
|      | • Polymer Filtration System  | • Optical Microrobot Single-Cell Manipulator/ Analysis System    |   |
| 1994 | • Bartas Iris Identification System  | • Oriented, Highly Anisotropic Conducting Polymer                |   |
|      | • Directed Light Fabrication of Complex Metal Parts  | • Photoinjector for RF Linac Accelerators                        |   |
|      | • Lattice Boltzmann Permeameter  | • 32-Stepper Motor Position Controller                           |   |
|      | • Optical Biopsy System  | 1986   | • Aurora Laser Beam Alignment System      |
|      | • Telemetric Heat Stress Monitor   | 1985   | • BHTP—A Unique Scintillation Compound    |
|      | • Ultrasensitive Ultrasonic Transducer   | 1984   | • Superconducting Magnetic Energy Storage |
|      |  | 1983   | • Transuranic Waste Assay System          |
|      |  | 1982   | • WC Field Computer System                |
|      |  | 1981   | • Radio Frequency Quadrupole Linac        |
|      |  | 1980   | • Portable Multichannel Analyzer          |
|      |  | 1978   | • Wee Pocket Radiation Detector           |
|      |  |  | • Diamond Machining of Optics             |
|      |  |  | • Electronic Device for Treating Tumors   |
|      |  |  | • Electronic Identification System        |



Mail Stop C333  
Los Alamos, NM 87545